

Claims:

1. A commodity monitoring network comprising:
  - a commodity provider operable to provide a commodity;
  - at least one measuring device being operable to measure a utilization characteristic
  - 5 of the commodity provided by the commodity provider, and to generate utilization data based on the characteristic; and
  - a gateway node including a network handler and a communication handler, the network handler being operable to receive data from the commodity provider, to generate network data based on the data received, and to send the network data to the
  - 10 communication handler, the communication handler being operable to receive the network data sent from the network handler, to generate communication data based on the received network data, to wirelessly transmit the communication data to the measuring device, and to wirelessly receive data including the utilization data from the measuring device.
2. The commodity monitoring network of claim 1, and wherein the network handler
- 15 further generates routing data based on the data received, and sends the routing data, and wherein the gateway node further comprises a scheduler operable to receive the routing data from the network handler, to retrieve a reading list based on the routing data, and to route scheduled data based on the list.
3. The commodity monitoring network of claim 2, and wherein the communication
- 20 handler generates communication data based on the scheduled data.
4. The commodity monitoring network of claim 2, and wherein the gateway node receives the data from the provider over a network.
5. The commodity monitoring network of claim 4, and wherein the network comprises a common carrier wide area network.
- 25 6. The commodity monitoring network of claim 1, and wherein the gateway node receives the utilization data over a wireless network.

7. The commodity monitoring network of claim 1, and wherein the communication handler comprises a radio-frequency handler having a plurality of communication channels, operable to transmit a radio-frequency message, to select a communication channel based on the message, and to receive radio-frequency data from the measuring device with the selection channel.

8. The commodity monitoring network of claim 1, and wherein the gateway node further comprises a message dispatcher operable to receive a request message from the network handler, to route to communicate with the measuring device when the request message targets the measuring device, and to route to process the request data on the gateway node when the request message targets the gateway node.

9. The commodity monitoring network of claim 1, and wherein the gateway node further comprises a data store operable to verify the network data, to receive a meter identification, to retrieve a provider identification based on the meter identification, and to process the meter and commodity identifications based on the network data.

10. The commodity monitoring network of claim 1, wherein the measuring device is an electric meter.

11. A commodity monitoring network comprising:

a commodity provider operable to provide a commodity;

at least one measuring device being operable to measure a utilization characteristic of the commodity provided by the commodity provider, and to generate utilization data based on the characteristic; and

a gateway node including a transceiver section, a network interface module and a programmable controller, the transceiver section having a plurality of communication channels and wirelessly receiving data including the utilization data and a channel selection from the device, the network interface module being operable to be coupled to the transceiver section, and the programmable controller operable to be coupled to the transceiver section, to process the channel selection from the transceiver section, and to set the transceiver section at a transceiver frequency corresponding to the channel selection.

12. The commodity monitoring network of claim 11, and wherein the network interface receives data from the provider, generates network data, and routes the network data, and wherein the controller further comprises a scheduler operable to receive the network data, to retrieve a reading list based on the network data, and to route scheduled data based on the list.
13. The commodity monitoring network of claim 12, and wherein the network interface module generates communication data based on the scheduled data.
14. The commodity monitoring network of claim 12, and wherein the gateway node receives the data from the provider over a network.
15. The commodity monitoring network of claim 14, and wherein the network comprises a common carrier wide area network.
16. The commodity monitoring network of claim 11, the gateway node further comprises a wide area network handler operable to receive wide area network data from the commodity provider, to process the wide area network data, and to route the processed wide area network data to the device.
17. The commodity monitoring network of claim 11, and wherein the transceiver section comprises a radio-frequency handler, operable to transmit a radio-frequency message, and to receive radio-frequency data from the measuring device.
18. The commodity monitoring network of claim 11, and wherein the gateway node further comprises a message dispatcher operable to receive a request message from the network handler, to route to communicate with the measuring device when the request message targets the measuring device, and to route to process the request data on the gateway node when the request message targets the gateway node.
19. The commodity monitoring network of claim 11, and wherein the gateway node further comprises a data store operable to verify the data, to receive a meter identification, to retrieve a provider identification based on the meter identification, and to process the meter and commodity identifications based on the data.

20. The commodity monitoring network of claim 11, wherein the at least one measuring device is an electric meter.

21. A commodity monitoring network comprising:

5 a commodity provider operable to provide a commodity;

at least one measuring device being operable to measure a utilization characteristic of the commodity provided by the commodity provider, and to generate utilization data based on the characteristic; and

10 gateway node means for receiving data including the utilization data and a channel selection over a network, for processing the received channel selection, for receiving the processed channel selection, and for setting a transceiver frequency corresponding to the channel selection.

22. The commodity monitoring network of claim 21, wherein the gateway node means includes a network interface means for processing the received channel selection, and  
15 wherein the a network interface means receives data from the provider, generating network data, and routing the network data, and a scheduling means for receiving network data, for retrieving a reading list based on the network data, and for routing scheduled data based on the list.

23. The commodity monitoring network of claim 22, and wherein the network  
20 interface means generates communication data based on the scheduled data.

24. The commodity monitoring network of claim 22, wherein the gateway node means includes transceiver means for selectively receiving routing data from the provider over a network.

25. The commodity monitoring network of claim 24, and wherein the network  
25 comprises a common carrier wide area network.

26. The commodity monitoring network of claim 21, the gateway node further comprises a wide area network handling means for receiving wide area network data from

the commodity provider, for processing the wide area network data, and for routing the processed wide area network data to the device.

27. The commodity monitoring network of claim 21, wherein the gateway node means includes transceiver means for wireless receiving the utilization data.

5 28. The commodity monitoring network of claim 21, wherein the gateway node means includes transceiver means for wireless receiving the utilization data, and wherein the transceiver means comprises a radio-frequency handling means for transmitting a radio-frequency message, and for receiving radio-frequency data from the measuring device.

10 29. The commodity monitoring network of claim 21, wherein the gateway node means includes transceiver means for wireless receiving the utilization data, and wherein the gateway node further comprises a message dispatching means for receiving a request message from the network interface means, for routing to communicate with the measuring device when the request message targets the measuring device, and for routing to process the request message on the gateway node when the request data targets the  
15 gateway node.

30. The commodity monitoring network of claim 21, and wherein the gateway node further comprises a data storing means for verifying the data, for receiving a meter identification, for retrieving a provider identification based on the meter identification, and for processing the meter and commodity identifications based on the data.

20 31. The commodity monitoring network of claim 21, wherein the at least one measuring device is an electric meter.

32. A method of monitoring a commodity utilization in a network, the network having a commodity provider operable to provide a commodity, and at least one measuring device being operable to measure a utilization characteristic of the commodity provided by the  
25 commodity provider, and to generate utilization data based on the characteristic, the method comprising:

receiving a commodity message from the provider;

retrieving an address of the measuring device based on the message;

wirelessly transmitting a device reading message to the device using the address;  
and

wirelessly receiving the commodity utilization data from the measuring device.

33. The method of claim 32, further comprising scheduling a device reading based on  
5 the commodity message, the commodity having a reading list that has a plurality of  
addresses, and each address corresponds to a measuring device in the network.

34. The method of claim 33, further comprising generating communication data based  
on the scheduled device.

35. The method of claim 33, further comprising receiving the message from the  
10 provider over a network.

36. The method of claim 35, and wherein the network comprises a common carrier  
wide area network.

37. The method of claim 32, further comprising:

receiving wide area network data from the commodity provider;

15 processing the wide area network data; and

routing the processed wide area network data to the measuring device.

38. The method of claim 32, further comprising receiving radio-frequency data from  
the measuring device.

39. The method of claim 32, further comprising:

20 receiving a request message;

routing to communicate with the measuring device when the request data targets  
the measuring device; and

routing to process the request data on the gateway node when the request data  
targets the gateway node.

40. The method of claim 32, wherein the at least one measuring device is an electric meter.

41. A commodity monitoring network comprising:

a commodity provider operable to provide a commodity;

5 at least one measuring device being operable to measure a utilization characteristic of the commodity provided by the commodity provider, and to generate utilization data based on the characteristic; and

a gateway node receiving routing data from the commodity provider and having a scheduler operable to program a scheduled reading list using the routing data, to retrieve a  
10 scheduled measuring device data from the scheduled reading list, and to initiate a scheduled meter reading using the scheduled measuring device data.

42. The commodity monitoring network of claim 41, and wherein the gateway further comprises a communication section operable to receive data including the routing data from the commodity provider, to generate communication data using the initiated  
15 scheduled meter reading, to wirelessly transmit the communication data to the measuring device, and to wirelessly receive data including the utilization data from the measuring device.

43. The commodity monitoring network of claim 42, and wherein the gateway node receives the data from the provider over a network.

20 44. The commodity monitoring network of claim 43, and wherein the network comprises a common carrier wide area network.

45. The commodity monitoring network of claim 41, and wherein the gateway node receives the utilization data over a wireless network.

46. The commodity monitoring network of claim 41, and wherein the communication  
25 section comprises a radio-frequency handler having a plurality of communication channels, operable to transmit a radio-frequency message, to select a communication channel based on the message, and to receive radio-frequency data from the measuring device with the selection channel.

47. The commodity monitoring network of claim 41, and wherein the gateway node further comprises a message dispatcher operable to receive a request message from the network handler, to route to communicate with the measuring device when the request message targets the measuring device, and to route to process the request data on the gateway node when the request message targets the gateway node.

48. The commodity monitoring network of claim 41, and wherein the gateway node further comprises a data store operable to verify the network data, to receive a meter identification, to retrieve a provider identification based on the meter identification, and to process the meter and commodity identifications based on the network data.

49. The commodity monitoring network claim 41, wherein the at least one measuring device is an electric meter.

50. A utility monitoring network comprising:

a utility provider operable to provide a utility;

at least one measuring device being operable to measure a utilization characteristic of the utility provided by the utility provider, and to generate utilization data based on the characteristic; and

a gateway node including a network handler and a communication handler, the network handler being operable to receive data from the utility provider, to generate network data based on the data received, and to send the network data, the communication handler being operable to receive the network data sent from the network handler, to generate communication data based on the received network data, to wirelessly transmit the communication data to the measuring device, and to wirelessly receive data including the utilization data from the measuring device.

51. The utility monitoring network of claim 50, and wherein the network handler further generates routing data based on the data received, and sends the routing data, and wherein the gateway node further comprises a scheduler operable to receive the routing data from the network handler, to retrieve a reading list based on the routing data, and to route scheduled data based on the list.



52. The utility monitoring network of claim 51, and wherein the communication handler generates communication data based on the scheduled data.

53. The utility monitoring network of claim 51, and wherein the gateway node receives the data from the provider over a network.

5 54. The utility monitoring network of claim 53, and wherein the network comprises a common carrier wide area network.

55. The utility monitoring network of claim 50, and wherein the gateway node receives the utilization data over a wireless network.

10 56. The utility monitoring network of claim 50, and wherein the communication handler comprises a radio-frequency handler having a plurality of communication channels, operable to transmit a radio-frequency message, to select a communication channel based on the message, and to receive radio-frequency data from the measuring device with the selection channel.

15 57. The utility monitoring network of claim 50, and wherein the gateway node further comprises a message dispatcher operable to receive a request message from the network handler, to route to communicate with the measuring device when the request message targets the measuring device, and to route to process the request data on the gateway node when the request message targets the gateway node.

20 58. The utility monitoring network of claim 50, and wherein the gateway node further comprises a data store operable to verify the network data, to receive a meter identification, to retrieve a provider identification based on the meter identification, and to process the meter and utility identifications based on the network data.

59. The utility monitoring network of claim 50, wherein the at least one measuring device is an electric meter.